

Claims

1. An overcurrent relay comprising:

a calculating unit for outputting a trip signal or a reset
5 signal to instruct supply and non-supply of power based on
current information on a main circuit current supplied to a
load;

a power source unit for supplying power to a coil based
on the trip signal or the reset signal when the trip signal
10 or the reset signal is input;

an electromagnet unit for performing a trip operation
to move a movable iron core from a position of a stationary
state to a position of a trip state and a reset operation to
move the movable iron core from the position of the trip state
15 to the position of the stationary state, the movable iron core
including the coil and forming a magnetic circuit, when the
power is supplied from the power source to the coil based on
the trip signal or the reset signal; and

a contact point mechanism unit for opening a
20 usually-closed contact point through the trip operation of the
movable iron core and closing the usually-closed contact point
through the automatic or manual reset operation,

wherein the contact point mechanism unit includes:

a movable contactor support for supporting a movable
25 contactor composing a part of the usually-closed contact point

while being maintained in the movable iron core; and

a reset bar arranged in a manner that is switchable between an automatic reset setting and a manual reset setting, wherein in the automatic reset setting the reset bar does not
5 engage with the movable contactor support in an operation range of the movable contactor support, and wherein in the manual reset setting the reset bar engages with the movable contactor support in interlock with the movable iron core to interrupt the reset operation of the movable iron core of the
10 electromagnet unit, and when the reset operation is manually performed the reset bar engages with the movable contactor support to be moved up to a position at which the reset operation is completed.

15 2. The overcurrent relay according to claim 1, wherein in the stationary state in the manual reset setting a position of the reset bar in the stationary state is defined when a protrusion provided in the reset bar on which a resilient force of a spring is exerted engages with a protrusion provided in
20 the movable contactor support, and

in the trip state in the manual reset setting when the engagement of the protrusion provided in the reset bar with the protrusion provided in the movable contactor support is released, the reset bar is moved in a direction in which the
25 resilient force of the spring is exerted, and a position of

the protrusion provided in the reset bar is defined on a rotation locus of the protrusion provided in the movable contactor support to interrupt the reset operation of the movable contactor support.

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3. The overcurrent relay according to claim 2, wherein the protrusion provided in the movable contactor support has a substantially cylindrical shape, and the protrusion provided in the reset bar has an inclined plane along a rotation locus
10 of the substantially cylindrical-shaped protrusion of the movable contactor support.

4. The electronic overcurrent relay employing a self-power feeding method according to claim 1, further
15 comprising a case engagement protrusion provided in the reset bar and a groove provided in the case and engaging with the case engagement protrusion to prevent the reset bar from being manually moved in a direction opposite to a direction in which a resilient force of a spring is exerted in the automatic
20 setting.

5. The overcurrent relay according to claim 1, wherein the movable contactor support includes an indication protrusion to indicate one of the stationary state and the trip
25 state, and the indication protrusion provided in the movable

contactor support has a step formed to be movable in a tripping direction to perform a test trip for confirming an operation by using a tool with which the step engages.

5 6. The overcurrent relay according to claim 1, wherein
a rotation position of the movable contactor support is defined
as a position at which a clearance between a contact point of
the movable contactor of the usually-closed contact point and
a contact point of a fixed contactor in the trip state becomes
10 approximately equal to a clearance between a contact point of
the movable contactor of the usually-opened contact point and
a contact point of the fixed contactor in the stationary state.